

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method of sensing multiple parameters, the method comprising:  
    implanting an implantable sensor at a single site in a patient, the implantable sensor having a housing within which are disposed a plurality of implantable sensing elements, each implantable sensing element of the plurality of implantable sensing elements is operable through electrical communication with an external controller via an individual interconnect, each implantable sensing element of the plurality of implantable sensing elements allowing for sensing at least one of a respective biological parameter, a respective physiological parameter, and a respective analyte; and  
    reading an output from at least one implantable sensing element of the plurality of implantable sensing elements,  
    wherein a plurality of parameters are read from the implantable sensor at the single site,  
    and  
    wherein the output read from said at least one implantable sensing element of the plurality of implantable sensing elements is a quantifiable value.
2. (Currently Amended) The method of Claim 1, wherein at least one particular implantable sensing element of the plurality of implantable sensing elements is a biological parameter sensor.
3. (Currently Amended) The method of Claim 1, wherein at least one particular implantable sensing element of the plurality of implantable sensing elements is a physiological parameter sensor.
4. (Currently Amended) The method of Claim 1, wherein at least one particular implantable sensing element of the plurality of implantable sensing elements is an analyte sensor.

5. (Currently Amended) The method of Claim 1, wherein reading an output from said at least one implantable sensing element of the plurality of implantable sensing elements comprises reading an output from an implantable sensing element of the plurality of implantable sensing elements that responds to lactate.
6. (Currently Amended) The method of Claim 1, wherein reading an output from said at least one implantable sensing element of the plurality of implantable sensing elements comprises reading an output from an implantable sensing element of the plurality of implantable sensing elements that responds to blood oxygen saturation.
7. (Currently Amended) The method of Claim 1, wherein reading an output from said at least one implantable sensing element of the plurality of implantable sensing elements comprises reading an output from an implantable sensing element of the plurality of implantable sensing elements that responds to blood pressure.
8. (Currently Amended) The method of Claim 1, wherein reading an output from said at least one implantable sensing element of the plurality of implantable sensing elements comprises reading an output from an implantable sensing element of the plurality of implantable sensing elements that responds to glucose.
9. (Currently Amended) The method of Claim 1, wherein reading an output from said at least one implantable sensing element of the plurality of implantable sensing elements comprises reading an output from an implantable sensing element of the plurality of implantable sensing elements that responds to temperature.
10. (Currently Amended) The method of Claim 1, wherein reading an output from said at least one implantable sensing element of the plurality of implantable sensing elements comprises

reading an output from an implantable sensing element of the plurality of implantable sensing elements that responds to potassium.

11. (Currently Amended) The method of Claim 1, wherein reading an output from said at least one implantable sensing element of the plurality of implantable sensing elements comprises reading an output from at least one implantable sensing element of the plurality of implantable sensing elements that responds to pH.

12. (Original) The method of Claim 1, further comprising administering therapy to the patient based on the output read from the at least one implantable sensing element.

13. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for myocardial ischemia.

14. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for myocardial infarction.

15. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for angina.

16. (Original) The method of Claim 12, wherein administering therapy comprises adjusting a function of an implantable cardiovascular defibrillator disposed within the patient.

17. (Original) The method of Claim 12, wherein administering therapy comprises adjusting a placement of an implantable cardiovascular defibrillator disposed within the patient.

18. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for sepsis.

19. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for septic shock.
20. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for a patient receiving extracorporeal membrane oxygenation.
21. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for a patient undergoing cardiac bypass.
22. (Original) The method of Claim 12, wherein administering therapy comprises administering therapy for a patient during dialysis.
23. (Currently Amended) The method of Claim 1, further comprising classifying a severity of a condition of the patient based on the output read from said at least one of the plurality of implantable sensing element.
24. (Original) The method of Claim 1, wherein the patient is in a surgical environment.
25. (Original) The method of Claim 1, wherein the patient is in an intensive care environment.
26. (Currently Amended) A method of evaluating a patient, the method comprising:  
implanting an implantable sensor in a patient, the implantable sensor having a housing within which are disposed a plurality of implantable sensing elements, each implantable sensing element of the plurality of implantable sensing elements is operable through electrical communication with an external controller via an individual interconnect, each implantable sensing element of the plurality of implantable sensing elements allowing for sensing at least one

of a respective biological parameter, a respective physiological parameter, and a respective analyte;

reading an output from at least one implantable sensing element of the plurality of implantable sensing elements; and

evaluating the patient based on the output read from the at least one implantable sensing element,

wherein a plurality of parameters are read from the implantable sensor at a single site, and

wherein the output read from said at least one implantable sensing element of the plurality of implantable sensing elements is a quantifiable value.

27. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient based on an output from ~~an~~ a particular implantable sensing element of the plurality of implantable sensing elements that responds to lactate.

28. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient based on an output from ~~an~~ a particular implantable sensing element of the plurality of implantable sensing elements that responds to blood oxygen saturation.

29. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient based on an output from ~~an~~ a particular implantable sensing element of the plurality of implantable sensing elements that responds to blood pressure.

30. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient based on an output from ~~an~~ a particular implantable sensing element of the plurality of implantable sensing elements that responds to glucose.

31. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient based on an output from ~~an~~ a particular implantable sensing element of the plurality of implantable sensing elements that responds to temperature.

32. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient based on an output from ~~an~~ a particular implantable sensing element of the plurality of implantable sensing elements that responds to potassium.

33. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient based on an output from ~~an~~ a particular implantable sensing element of the plurality of implantable sensing elements that responds to pH.

34. (Original) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient for myocardial ischemia.

35. (Original) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient for myocardial infarction.

36. (Original) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient for angina.

37. (Original) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient having an implantable cardiovascular defibrillator.

38. (Original) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient for sepsis.

39. (Original) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient receiving extracorporeal membrane oxygenation.

40. (Currently Amended) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient while the patient is undergoing a cardiac bypass.

41. (Original) The method of Claim 26, wherein evaluating the patient comprises evaluating the patient during dialysis.

42. (Currently Amended) A method of sensing multiple parameters, the method comprising:

implanting an implantable sensor at a single site in a patient, the implantable sensor having a housing within which are disposed a plurality of implantable sensing elements; and reading an output from at least one implantable sensing element of the plurality of implantable sensing elements,

wherein each implantable sensing element of the plurality of implantable sensing elements each comprises a respective power supply,

wherein a plurality of parameters are read from the implantable sensor at the single site, and

wherein the output read from said at least one implantable sensing element of the plurality of implantable sensing elements is a quantifiable value.

43. (Currently Amended) A method of sensing multiple parameters, the method comprising:

implanting an implantable sensor at a single site in a patient, the implantable sensor having a housing within which are disposed a plurality of implantable sensing elements, each implantable sensing element of the plurality of implantable sensing elements operable through electrical communication with an external controller via a respective individual interconnect of a plurality of individual interconnects, each implantable sensing element of the plurality of

implantable sensing elements allowing for sensing at least one of a respective biological parameter, a respective physiological parameter, and a respective analyte; and

reading an output from at least one implantable sensing element of the plurality of implantable sensing elements,

wherein a plurality of parameters are read from the implantable sensor at the single site,

wherein the output read from said at least one implantable sensing element of the plurality of implantable sensing elements is a quantifiable value, and

wherein the plurality of implantable sensing elements comprises a lactate sensing element measuring a parameter for blood lactate level, a blood oxygen saturation sensing element measuring a parameter for blood oxygen level, and a pH level sensing element measuring a parameter for pH level.

44. (Previously Presented) The method of Claim 43, further comprising the step of administering therapy for myocardial ischemia to the patient based on the output read from the at least one implantable sensing element.

45. (Previously Presented) The method of Claim 43, further comprising the step of administering therapy for myocardial infarction or angina to the patient based on the output read from the at least one implantable sensing element.

46. (Previously Presented) The method of Claim 43, further comprising the step of implanting an implantable cardiovascular defibrillator (ICD) into the patient and administering defibrillation on the patient based on the output read from the at least one implantable sensing element.

47. (Previously Presented) The method of Claim 43, further comprising the step of administering therapy for sepsis or septic shock to the patient based on the output read from the at least one implantable sensing element.



48. (Previously Presented) The method of Claim 43, further comprising the step of administering therapy for extracorporeal membrane oxygenation (ECMO) to the patient based on the output read from the at least one implantable sensing element.

49. (Currently Amended) The method of Claim 1, wherein the individual interconnect between each implantable sensing element of the plurality of implantable sensing elements and the external controller does not pass through ~~another~~ any other implantable sensing element of the plurality of implantable sensing elements.

50. (Currently Amended) The method of Claim 26, wherein the individual interconnect between each implantable sensing element of the plurality of implantable sensing elements and the external controller does not pass through ~~another~~ any other implantable sensing element of the plurality of implantable sensing elements.

51. (New) The method of claim 1,  
wherein the external controller is external to the housing of the implantable sensor; and  
wherein the individual interconnect between each implantable sensing element of the plurality of implantable sensing elements and the external controller is separate from all other individual interconnects for every other implantable sensing element of the plurality of implantable sensing elements on a corresponding communication path from the implantable sensing element to the external controller.

52. (New) The method of claim 26,  
wherein the external controller is external to the housing of the implantable sensor; and  
wherein the individual interconnect between each implantable sensing element of the plurality of implantable sensing elements and the external controller is separate from all other individual interconnects for every other implantable sensing element of the plurality of

implantable sensing elements on a corresponding communication path from the implantable sensing element to the external controller.

53. (New) The method of claim 43,

wherein the external controller is external to the housing of the implantable sensor; and  
wherein each respective individual interconnect between each implantable sensing element of the plurality of implantable sensing elements and the external controller is separate from all other individual interconnects of the plurality of individual interconnects on a corresponding communication path from the implantable sensing element to the external controller.

54. (New) The method of claim 42,

wherein each implantable sensing element of the plurality of implantable sensing elements is operable through electrical communication with an external controller via a respective individual interconnect of a plurality of individual interconnects.

55. (New) The method of claim 42,

wherein each implantable sensing element of the plurality of implantable sensing elements allows for sensing at least one of a respective biological parameter, a respective physiological parameter, and a respective analyte.